

Practice Guide for Developing Mobile Apps



The Office of the Government Chief Information Officer
The Government of the Hong Kong Special Administrative Region

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BUILDING A USEFUL MOBILE APP

With the advance in mobile technology and the ever-increasing number of smartphone users in Hong Kong, the public now expects access to information and services anytime, anywhere, on any device and through any platform. Providing services through mobile channels is gaining currency in both public and private sectors. In line with this trend, 36 B/Ds have launched a total of 121 mobile apps for the public¹. Some Government apps received very good responses in terms of number of downloads, users feedback and word of mouth. However, some of the apps are not so well-received.

Our objective is to provide the public with mobile apps that cater for their needs and are easy to use, rather than sheer number. In this connection, we have put together this Practice Guide to facilitate the achievement of desirable outcome.

¹ As at November 2015

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THE MOBILE APP DEVELOPMENT ROADMAP

In order to facilitate B/Ds to develop and launch useful mobile apps for the public, we have put together a set of key considerations in five categories of the mobile app development roadmap as shown on the right.



1. Plan

Good planning is halfway to success!

B/Ds should set a clear objective of building the app, that is, **what can the app do for users**. Do not build an app just for the sake of it.

B/Ds should have a reasonable estimate of the download rate before considering developing a mobile app. A business case should be identified by assessing the potential benefits that the mobile app will bring to the Government and the public against the development and on-going support and enhancement costs of the app.



OFCA Broadband Performance Test and MyObservatory are the two most popular Government apps.

If it is for information only, do consider responsive web on webpages that can serve both web and mobile users.

Plan and budget for ongoing maintenance and upgrade in advance as mobile apps require constant updates due to frequent changes in technology – new features, new versions of operating systems etc.



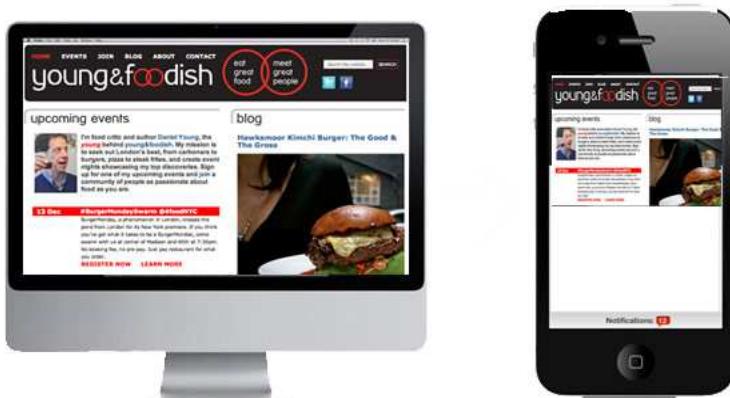
It is the user interface design and the iterative build and test of the app!

Design

Design is not just what it looks like and feels like, it is how it works.

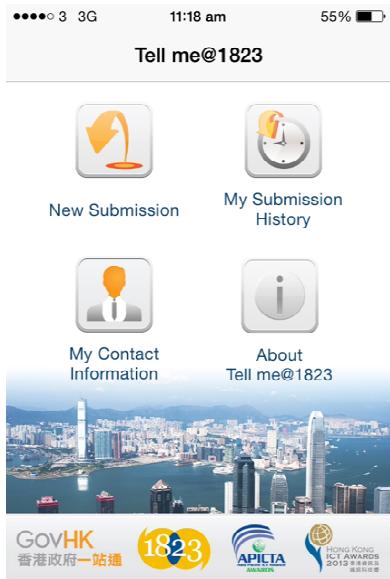
- Steve Jobs

When designing the app, focus on **what the users want** and **how the app works** rather than just the look and feel. Bear in mind the differences in user interactions and behaviours of using mobile devices and desktop computers and do not try to mimic a desktop application. A unique feature of mobile app is it can be used **anywhere and anytime**.



A mobile app mimicking a desktop application makes for an unintuitive and cumbersome experience for users.

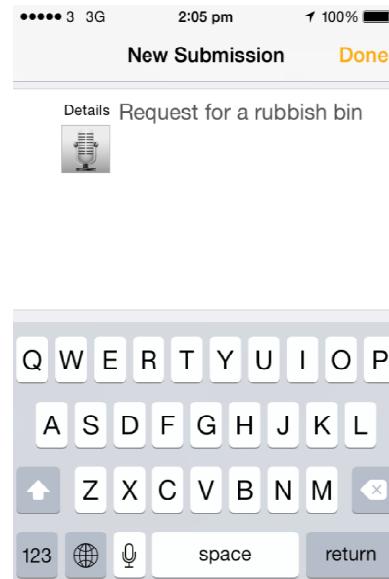
Don't forget there are **cameras**, **microphone**, **GPS** and **Bluetooth** in most smartphones. Leveraging these features can expand the functions of the app, tailor to specific needs and enhance the user experience. Push messages are very useful for mobile apps to get informed on a timely manner, such as typhoon signal. The following set of screens demonstrate how the app **Tell me@1823** leverages the mobile features in the app.



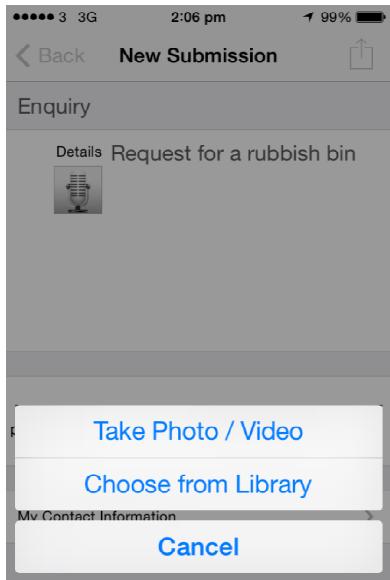
1. Create a new case



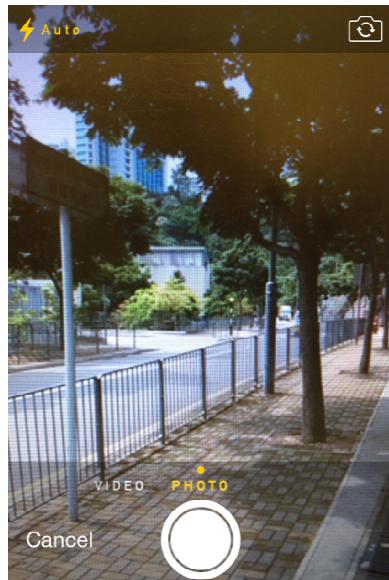
2. Select case type



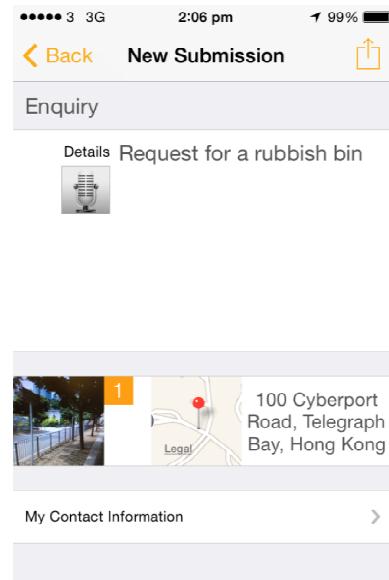
3. Enter case details



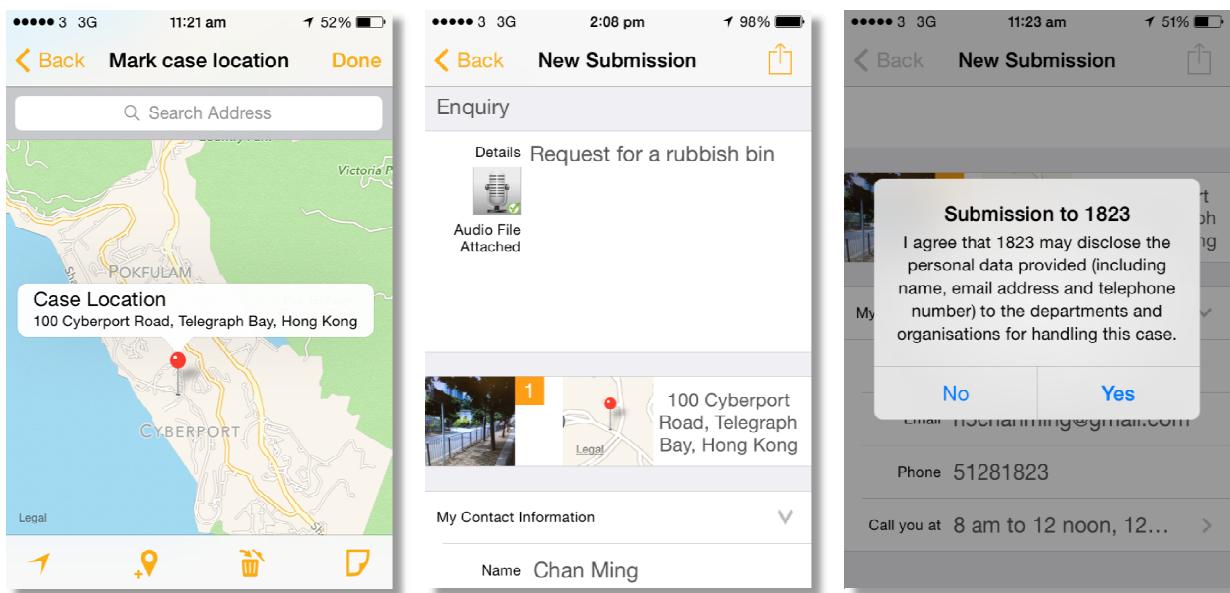
4. Include additional information



5. Take a photo (using camera)



6. Include case location (using GPS)



7. Map showing the case location

8. Include a voice message (using recorder)

9. Submit the case

The mobile app should also be designed with security in mind as there is a high possibility of losing the device due to its “mobile” nature. Encrypt sensitive data where appropriate.

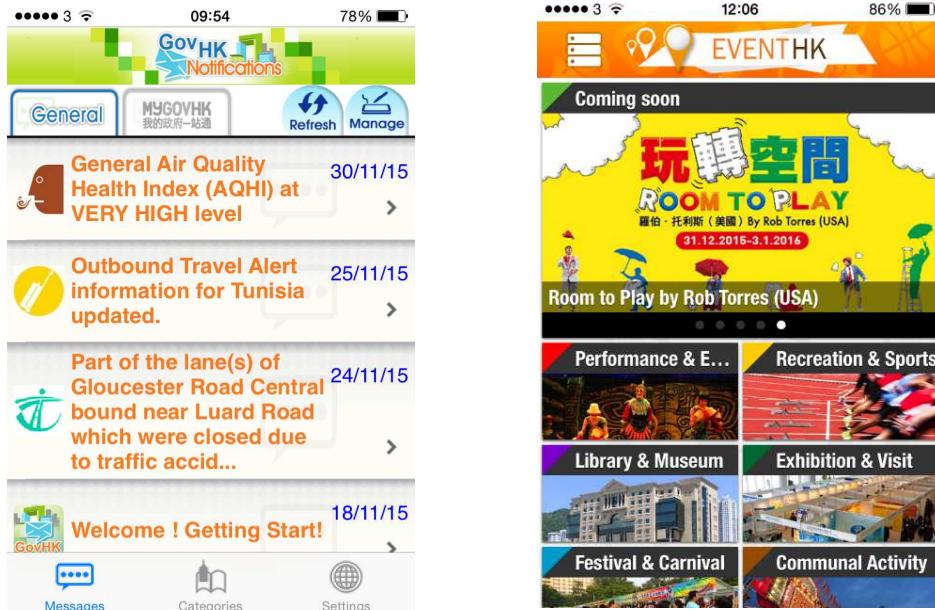
Build

Use cross-platform development tools and the mobile templates / reference model from OGCIO to save time and cost.

There are cross-platform development tools in the market that can help create an app for multiple platforms with a single set of source code. B/Ds can consider making use of these development tools to build their app. This may help reduce the development cost and subsequent maintenance cost, and also expedite time to market. Information on these tools is in the **Technical Guidelines**.

In addition to cross-platform development tools, reusing the codes that OGCIO has developed can help shorten development time. Please refer to the **Technical Guidelines** for more information.

OGCIO has also developed several platform apps, such as GovHK Notifications and Event HK, as shown below. B/Ds should consider making use of such apps to disseminate information to the public.



Test

Do not underestimate the effort required to test the mobile app.

Even if your app is intended for just the two most popular operating systems – iOS and Android, you still need to test for different screen sizes and orientations, different screen resolution, camera capabilities, and so forth, not to mention security, accessibility, and if necessary, privacy. OGCIO has formed the **Volunteer Mobile Apps Testing Group** to test beta version of your app on a wide range of mobile devices. Please refer to the **Technical Guidelines** for more information.

You may also consider acquiring the **Independent Testing Services** through the **Standing Offer Agreement for Quality Professional Services 3 (SOA-QPS3, Category 4)** to obtain impartial quality assessment of your software developers' work. An independent testing party can bring you quality and objective testing, as well as access the industries' best QA/QC practices.



Pay attention to time required for the App Stores to verify your app!

Deploy your mobile app through the official App Stores, such as Apple App Store and Google Play. Some of the App Stores require an approval process for the apps to be made available to the public. B/Ds should understand the process and pay attention to the elapsed time required.

Let people find your app in the GovHK one-stop portal. Register your mobile app with the OGCIO (email: govhkmd@ocgio.gov.hk) for placement in **GovHK Apps** (「政府App 站通」) as well as in the list of Government mobile apps on **GovHK** (「香港政府一站通」).



The list of Government apps on GovHK



Let people know you have launched an app!

Having successfully deployed your app to the App Stores is not the end of the story. You need to promote the app and let your target users know. Press releases, social media and App Store Optimization are some typical means of app promotion. You should also promote your app on your departmental website.



Video promotion in YouTube GovHK video channel



You cannot manage what you cannot measure!

Once the app is launched, it is important to measure its effectiveness. B/Ds can get the number of downloads from the App Stores, e.g. iTunes and Google Play. Please refer to the **Technical Guidelines** for details.

By looking at the number of downloads, user comments and ratings, you can assess whether the app can meet the expected outcomes and deliver the intended benefits. Well-received mobile apps are continuously improved on the basis of feedback. Consider to have built-in mechanism for collecting feedback.



Rating and comments of **EventHK** and **GovHK Notifications** on Google Play

3 DOS AND DON'TS

To summarize, for an app to succeed, there are some dos and don'ts that you need to observe.

Dos

1. Set a clear objective.

B/Ds should have a clear idea about the objective of building the app – what your users want from the app and why they need it.

2. Justify the development and on-going support cost with estimated number of downloads and potential business benefits.

Identify and articulate your business case and justify the development and on-going support cost with the estimated number of downloads/usages and potential business benefits that the app will bring.

3. Utilize the features of mobile devices to build a robust app – cameras, GPS, Bluetooth, notifications, reminders and sensors, etc.

B/Ds should leverage the strengths and on-the-go nature of mobile technologies to provide better user experience.

4. Promote and market your app.

There is no point in launching an app for the public but without public visibility. Promote and market your app to let more people download and use it.

5. Collect and analyse usage/download statistics and comments for continuous improvement.

You cannot manage what you cannot measure. Collect and analyse the download statistics and comments from the users. Such feedback will let you know how your app is doing and how you can further enhance the app.

6. Plan for decommissioning your app.

Consider sunsetting your app if it does not meet your original objectives, or when there are other apps that can better serve the purposes.

Don'ts

1. Don't build an app just for the sake of it.

Although people are shifting from desktop to mobile and B/Ds are launching more and more mobile apps for the public, don't build an app just for the sake of it. You should focus on the objective of having the app – again, ask yourself what your users want from the app and why they need it.

2. Don't copy content from web pages, or merely link the app to web pages.

Remember, people can access the Internet using mobile devices. Therefore you don't need to build an app if the content of the app is copied from your web pages or if the app just contains links pointing to web pages.

3. Don't treat mobile devices as another screen and mimic a desktop application.

User interactions and behaviours of using mobile devices and desktop computers are very different. B/Ds should not treat mobile devices as just another screen and extend the desktop online services to mobile devices. A mobile app mimicking a desktop application can be cumbersome for users, resulting in low adoption and usage.

4. *Don't develop an app without a promotion plan on hand.*

Before you start building an app, plan how you will promote it. A promotion plan allows you to systematically launch promotion campaigns or activities that will help attract more downloads and wider adoption of the app.

5. *Don't underestimate the testing effort.*

Remember you need to test your app for different operating systems, different screen sizes and orientations, different screen resolution, camera capabilities, and so forth.

6. *Don't just focus on the look and feel. How the app works is more important.*

As Steve Jobs said, "Design is not just what it looks like and feels like. It is how it works." Bear in mind that providing an intuitive user experience and at the same time achieving the objective of the app are more important than its look and feel.

7. *Don't reinvent the wheel.*

Make use of the pre-built components (forms, navigation bars, buttons, lists, social integration, selection of calendar entries, etc.) to build your app. This not only saves development cost, but also shortens the time to market. Most importantly, your users will readily appreciate the interface.